“Innovative Nanocapsules for skin care – Textiles & Cosmetics”

Carla Silva, CTO
CeNTI – Centre for Nanotechnology and Smart Materials
csilva@centi.pt
**Problem / Needs**

Europe is ageing

By 2060, one in three Europeans will be over 65

- Aging’s **aesthetic concerns**
- Chronic and infectious **skin diseases**
- **Antimicrobial resistance**
- **Costs for healthcare** rising sharply!

Eu governments face the **increasing demands from their citizens – silver economy.**

Cosmeceutics – a strategic sector

The fastest growing segment of personal care:

$42.4 billion by 2018

EU healthcare system was responsible for spending almost **15%** of all **government expenditure in 2010.**
Market Opportunity

**Smart Textiles** market is expected to reach USD 4.72 billion by 2020, at a CAGR of 34% between 2015 and 2020.

**Cosmetic market** is estimated to reach USD 675 billion by 2020, at a rate of 6.4%. From this, skin care has the highest market share.

Existing Solutions (*market competitors*) – **Nanocapsules related**:

1. Macro or microencapsulated PCMs on textiles for thermal comfort;
2. Nanoencapsulated **single active principles** for anti-ageing in high-end cosmetic products;
3. Antimicrobial solutions based on **silver or aggressive chemical agents** in both textiles and cosmetic products. No natural essential oils-based alternatives available.
SKHINCAPS PRODUCTS

Cost-effective, safe, innovative and sustainable customised **NANOCAPSULES** for:

- **PCMs**, enhancing their performance in terms of thermal comfort (higher surface area → increased effectiveness);
- Combination of several **antioxidants and vitamins** in a single nanocapsule, increasing their effectiveness onto skin, for more intense and long lasting effects;
- **Natural essential oils** for antibacterial control, allowing their effective use within textiles and cosmetics products.

We will be delivering **Cost-effective, Sustainable and Safe** ‘Smart’ Skin Care Products with enhanced properties:

1. First layer textiles (**thermal comfort**) – 3 years
2. **Anti-ageing** cosmetic formulations & textiles - 5 years
3. Lotions & textiles for **antimicrobial** infections – 5 years
SKHINCAPS SOLUTIONS

Nanocapsulation Proprietary Technology
- Safe, sustainable, cost-effective
- Water-based formulations
- Easy to scale up

- No-release: Phase-change materials (PCMs)
- Triggered release: Cocktail of vitamins and antioxidants
- Targeted release: Natural essential oils (bacteria control)

Biocompatible, adhesive Customised Polymers
Encapsulation Technology

Natural Active Ingredients

Novel, customised, safe Stimuli-responsive NANOCAPSULES

‘Smart’ SKHINCAPS Products (textiles and cosmetics)

EuroNanoForum 2017
21 - 23 June 2017, Valletta (Malta)
SKHINCAPS TEAM

- Carla Silva & Dora Coelho: **Coordination & R&D**
- Sergiy Grishchuk & Bernd Wetzel: **R&D**
- Tzanko Tzanov & Eva Ramon: **R&D**
- Catharina Hoenthal & Tiina Pajula: **LCA and LCC**
- Susana Sanchez & Maria Llorente: **Nanoencapsulation tech (SME)**
- Roberto Teixeira & Alexandre Beirão: **Textiles formulations (SME)**
- Diana Rivera & Laura Delgado: **Cosmetic formulations (SME)**
SKHINCAPS BUSINESS

Offering stimuli responsive NANOCAPSULES for:
- Functionalised Textiles for close contact with skin;
- Cosmetic formulations for human skin care.

Product Portfolio
- Functional formulations for apparel, home, technical textiles;
- Enriched formulations for facial creams, serums, body lotions.

Market & Customer
- Pull-through strategy
  - Technical textile companies;
  - Health & Beauty, Pharmacies.

Business Proposition
- Offer innovative and cost-efficient skin care formulations;
- Customer groups (rest, health, wellness, ...).

Selling in Europe
- Different channels according to End User;
- B2B sales (direct through sales representatives, e-commerce, etc.);
- End consumer driven sales force.

We need end-users for testing & validation

Unique opportunity to be the first users of the ‘Smart’ SKHINCAPS products

50% discount upon acquisition of ‘Smart’ SKHINCAPS products during 5 years
Thank you for your attention.

Carla Silva, CTO
CeNTI – Centre for Nanotechnology and Smart Materials
csilva@centi.pt

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 685909.